TABLE 6. MONTHLY POWER

(in millions of kilowatthours)

ITEM	MONTH						
	JAN	FEB	MAR	APR	MAY	JUN	JUL
ENERGY USED BY SWP PUMPING AND POWER PLANTS							
Hyatt-Thermalito Pumpback and Station Service	0.62	1.17	0.03	31.63	45.20	12.08	21.18
North Bay Interim Pumping Plant	0.33	0.20	0.09	0.09	0.14	0.21	0.21
South Bay Pumping Plant	6.43	5.82	3.04	7.61	10.19	12.12	14.68
Del Valle Pumping Plant	0.01	0.01	0.01	0.00	0.00	0.00	0.01
Harvey O. Banks Delta Pumping Plant	87.15	33.77	13.68	35.92	55.19	53.37	50.24
San Luis Pumping-Generating Plant (SWP Share)	62.98	2.67	0.66	1.56	5.87	0.14	0.13
Dos Amigos Pumping Plant (SWP Share)	16.21	13.92	7.39	14.21	25.56	27.21	39.03
Buena Vista Pumping Plant	19.23	14.39	9.02	12.48	28.05	24.45	28.87
Wheeler Ridge Pumping Plant	21.25	14.89	5.91	11.77	29.33	21.63	26.38
Chrisman Wind Gap Pumping Plant	47.28	32.64	11.61	23.65	62.14	43.57	54.89
A. D. Edmonston Pumping Plant	166.11	114.84	37.74	81.09	216.79	148.04	187.03
Alamo Powerplant (Station Service)	0.00	0.00	0.00	0.00	0.01	0.05	0.01
Pearblossom Pumping Plant	17.02	12.56	8.12	5.22	40.63	30.91	32.11
Devil Canyon Powerplant (Station Service)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oso Pumping Plant	13.15	8.86	1.13	6.73	8.45	4.02	8.07
William E. Warne Powerplant (Station Service)	0.02	0.07	0.12	0.10	0.11	0.10	0.09
Las Perillas Pumping Plant (SWP Share)	0.52	0.39	0.61	1.09	1.49	1.84	1.97
Badger Hill Pumping Plant	1.38	1.02	1.62	2.93	4.12	5.01	5.23
Subtotal	459.69	257.22	100.78	236.08	533.27	384.75	470.13
System Losses and Unaccounted for Energy	18.85	25.61	28.04	9.53	3.12	9.14	11.10
Total	478.54	282.83	128.82	245.61	536.39	393.89	481.23
SWP ENERGY SOURCES							
Hyatt-Thermalito Powerplants	44.32	303.70	536.72	148.44	169.87	167.34	313.11
San Luis Pumping-Generating Plant (SWP Share)	0.00	0.00	0.06	0.09	7.75	10.11	34.44
Alamo Powerplant	0.00	0.00	0.00	0.00	0.00	0.28	6.24
Devil Canyon Powerplant	26.56	26.78	10.03	17.96	61.04	52.48	54.85
William E. Warne Powerplant	26.76	18.03	0.87	14.47	16.77	9.03	16.38
Castaic Powerplant (SWP Share)	48.36	32.64	0.07	25.78	25.68	14.93	28.54
Bottle Rock Powerplant	24.62	16.08	12.40	-0.11	-0.11	3.84	23.69
Reid Gardner Unit No. 4	173.59	15.77	0.00	54.08	54.52	88.56	89.24
Pine Flat Powerplant	-0.06	7.78	110.77	128.52	135.24	144.27	140.31
TERA Power Corporation	0.02	0.37	0.41	0.73	0.79	0.66	0.41
MWDSC Hydroelectric Plants (Exchange Energy)	12.50	8.83	8.54	13.22	21.54	20.76	22.02
Power Exchange Delivered to SCE	-59.07	-143.35	-240.77	-102.54	-153.65	-136.45	-221.33
Power Exchange Received from SCE	223.62	262.60	278.86	245.50	231.64	210.74	284.86
Energy Exchange Pacific Gas and Electric Company	0.00	-12.57	0.21	1.94	0.00	5.90	6.58
SCE-SBVMWD Exchange	-0.14	-0.12	-0.13	-0.15	-0.18	-0.20	-0.21
USBR Schedule Excess	0.00	0.36	0.18	0.12	0.12	0.24	0.05
Purchases							
British Columbia Hydro Power Authority	27.57	0.00	0.00	0.00	0.00	0.00	0.00
Bonneville Power Authority	40.32	37.27	20.39	9.25	104.37	69.07	15.05
Idaho Power Company	38.45	0.00	0.00	0.00	0.00	0.00	0.00
Montana Power Company	16.65	0.00	0.00	0.00	0.00	0.00	0.00
Portland General Electric Company	0.00	0.00	16.03	15.15	15.03	15.96	15.60
Pacific Power and Light Company	16.00	0.00	0.00	0.00	0.00	0.00	33.02
Salt River Project	0.00	1.40	1.75	0.40	0.00	0.00	0.00
Washington Water and Power Company	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	660.07	575.57	756.39	572.85	690.42	677.52	862.85
Less Sales	181.53	292.74	627.57	327.24	154.03	283.63	381.62
Total	478.54	282.83	128.82	245.61	536.39	393.89	481.23

Power Operations

DWR has operated as a bulk power agency since April 1983. As such, DWR operates a mix of owned, contracted, and purchased power resources to meet SWP needs via contracted transmission capacity. This was DWR's third full year as a bulk power agency.

Energy Use

Table 6 summarizes monthly SWP energy use at SWP plants during 1986. Total energy use and losses for the year were 5.18 billion kWh, approximately 6 percent less than the amount used in 1985. This decreased energy use reflected decreased water deliveries to SWP contractors by about 12 percent from 1985. SWP energy use was nearly evenly distributed

OPERATIONS IN 1986

(in millions of kilowatthours)

MONTH						ITEM
AUG	SEP	OCT	NOV	DEC	TOTAL	
						ENERGY USED BY SWP PUMPING AND POWER PLANTS
27.83	15.45	4.87	6.76	6.88	173.70	Hyatt-Thermalito Pumpback and Station Service
0.19	0.13	0.09	0.05	0.08	1.81	North Bay Interim Pumping Plant
14.33	8.31	5.00	4.25	8.79	100.57	South Bay Pumping Plant
0.00	0.01	0.00	0.01	0.01	0.07	Del Valle Pumping Plant
82.78	110.89	61.87	54.42	56.83	696.11	Harvey O. Banks Delta Pumping Plant
5.98	55.11	25.47	0.88	4.38	165.83	San Luis Pumping-Generating Plant (SWP Share)
38.60	25.71	17.38	23.62	22.39	271.23	Dos Amigos Pumping Plant (SWP Share)
32.17	31.36	20.09	25.08	21.67	266.86	Buena Vista Pumping Plant
30.45	34.92	22.55	28.68	24.79	272.55	Wheeler Ridge Pumping Plant
66.56	77.41	49.67	63.60	54.37	587.39	Chrisman Wind Gap Pumping Plant
230.55	271.24	174.16	225.92	191.48	2,044.99	A. D. Edmonston Pumping Plant
0.02	0.00	0.02	0.01	0.03	0.15	Alamo Powerplant (Station Service)
31.60	37.62	27.42	32.81	13.01	289.03	Pearblossom Pumping Plant
0.00	0.00	0.00	0.00	0.01	0.01	Devil Canyon Powerplant (Station Service)
13.52	16.47	9.35	13.54	17.72	121.01	Oso Pumping Plant
0.02	0.01	0.13	0.07	0.04	0.88	William E. Warne Powerplant (Station Service)
1.29	0.71	0.41	0.07	0.15	10.54	Las Perillas Pumping Plant (SWP Share)
3.52	1.89	1.07	0.15	0.37	28.31	Badger Hill Pumping Plant
579.41	687.24	419.55	479.92	423.00	5,031.04	Subtotal
8.90	9.87	19.62	13.62	8.72	166.12	System Losses and Unaccounted for Energy
588.31	697.11	439.17	493.54	431.72	5,197.16	Total
						SWP ENERGY SOURCES
223.16	201.88	154.05	99.61	88.31	2,450.51	Hyatt-Thermalito Powerplants
13.62	0.03	0.00	0.00	0.00	66.10	San Luis Pumping-Generating Plant (SWP Share)
6.33	6.83	5.04	5.96	1.92	32.60	Alamo Powerplant
51.59	62.58	54.51	48.65	22.38	489.41	Devil Canyon Powerplant
30.21	35.11	19.69	27.53	35.93	250.78	William E. Warne Powerplant
47.30	56.26	26.84	48.81	60.89	416.10	Castaic Powerplant (SWP Share)
24.60	24.76	26.47	11.08	11.71	179.03	Bottle Rock Powerplant
83.27	80.25	56.73	35.18	67.67	798.86	Reid Gardner Unit No. 4
99.30	34.89	22.73	-0.09	-0.23	823.43	Pine Flat Powerplant
0.49	0.34	0.20	0.05	0.00	4.47	TERA Power Corporation
20.46	19.92	18.96	22.44	10.56	199.75	MWDSC Hydroelectric Plants (Exchange Energy)
-184.31	-180.67	-134.23	-108.09	-75.22	-1,739.68	Power Exchange Delivered to SCE
333.30	369.87	345.90	343.35	299.21	3,429.45	Power Exchange Received from SCE
0.00	0.00	0.00	0.00	0.00	2.06	Energy Exchange Pacific Gas and Electric Company
-0.19	-0.22	-0.24	-0.14	-0.16	-2.08	SCE-SBVMWD Exchange
0.09	0.00	0.14	0.51	0.43	2.24	USBR Schedule Excess
						Purchases
0.00	0.00	0.00	0.00	0.00	27.57	British Columbia Hydro Power Authority
111.03	49.10	106.49	102.20	92.71	757.25	Bonneville Power Authority
0.00	0.00	0.00	0.00	0.00	38.45	Idaho Power Company
0.00	0.00	0.99	1.19	1.48	20.31	Montana Power Company
16.40	15.20	15.65	16.00	15.60	156.62	Portland General Electric Company
56.33	36.91	36.50	37.31	0.00	216.07	Pacific Power and Light Company
0.72	0.00	7.64	30.66	16.27	58.84	Salt River Project
0.00	0.21	0.00	0.00	0.00	0.21	Washington Water and Power Company
933.70	813.25	764.06	722.21	649.46	8,678.35	Subtotal
345.39	116.14	324.89	228.67	217.74	3,481.19	Less Sales
588.31	697.11	439.17	493.54	431.72	5,197.16	Total

between the two major power service areas: Pacific Gas and Electric Company (PGandE) and Southern California Edison Company (SCE). About 2.54 billion kWh were used by SWP plants in PGandE's service area, compared with 2.49 billion kWh used in SCE's service area.

Under various water conveyance contracts and exchange agreements, some CVP water is pumped through SWP facilities at Banks Delta, Dos Amigos, San Luis, and Las Perillas pumping plants. The USBR furnishes the energy for this use of SWP pumping facilities. Table 6A summarizes the total amount of en-

ergy used for pumping at each plant, the energy furnished by the USBR, and the derivation of the net SWP energy use presented in Table 6. (The quantities shown as "excess daily energy scheduled by USBR" represent the accumulations of small differences between hourly amounts of energy scheduled for pumping SWP water and those actually used.) Similarly, Table 6A shows the derivation of the SWP share of energy generated at the San Luis Pumping-Generating Plant.

Energy Sources

Table 6 also shows the monthly sources of SWP energy during 1986. The output of the Hyatt-Thermalito power complex in 1986 was 2.45 billion kWh, about 44 percent higher than last year's output and just above the estimated average annual output of 2.38 billion kWh.

Energy generation at the SWP power recovery plants (San Luis, Alamo, Devil Canyon, Warne, and Castaic) totaled about 1.25 billion kWh, about 83 percent of last year's amount. The combined output of the recovery plants and the Hyatt-Thermalito facilities was sufficient to meet about 72 percent of SWP energy requirements in 1986.

Other SWP hydroelectric power resources are obtained under contract with the Kings River Conservation District (KRCD) and MWDSC. The KRCD contract provides DWR with all of the output of the 165-MW Pine Flat Powerplant. The plant furnished 0.82 billion kWh to the SWP in 1986. Under the MWDSC contract, DWR receives energy from five small hydroelectric plants on the MWDSC system (30 MW total capacity). As explained in Chapter VI, DWR has exchange agreements with SCE and the Los Angeles Department of Water and Power (LADWP) to facilitate transmission of energy from the MWDSC plants to the SWP.

Under the 1979 DWR-SCE Power Contract, in effect since April 1983, part of the Hyatt-Thermalito generation and all of the output of Devil Canyon and Alamo power plants are delivered to SCE. The energy is generally delivered during on-peak periods and a greater amount of energy is returned during off-peak periods. Table 6 shows both the monthly quantities of energy delivered and returned under this

TABLE 6A. RECONCILIATION OF ENERGY USE IN 1986 FOR SWP

(in millions of kilowatthours)

ITEM	MONTH						
	JAN	FEB	MAR	APR	MAY	JUN	JUL
Harvey O. Banks Delta Pumping Plant							
Energy Metered at Pumping Plant	91.98	33.77	13.68	35.92	55.19	53.37	71.46
Less Energy Scheduled by USBR for CVP Pumping	- 4.83	0.00	0.00	0.00	0.00	0.00	-21.22
Plus Excess Daily Energy Scheduled by USBR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	87.15	33.77	13.68	35.92	55.19	53.37	50.24
Dos Amigos Pumping Plant							
Energy Metered at Pumping Plant	31.75	28.42	18.58	28.69	43.01	60.14	71.26
Less Energy Scheduled by USBR for CVP Pumping	-15.54	-14.50	-11.15	-14.48	-17.45	-32.93	-32.23
Less Energy Scheduled by USBR for Station Service	0.00	0.00	0.04	0.00	0.00	-0.00	0.00
Plus Excess Daily Energy Scheduled by USBR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	16.21	13.92	7.39	14.21	25.56	27.21	39.03
San Luis Pumping Plant							
Energy Metered at Pumping Plant	106.47	45.80	41.33	29.93	8.35	0.25	0.25
Less Energy Scheduled by USBR for CVP Pumping	-43.29	-43.29	-40.53	-28.33	-2.35	0.00	0.00
Less Energy Scheduled by USBR for Station Service	-0.20	-0.20	-0.19	-0.15	-0.14	-0.11	-0.12
Plus Excess Daily Energy Scheduled by USBR	0.00	0.36	0.05	0.11	0.01	0.00	0.00
Energy Used for SWP Pumping	62.98	2.67	0.66	1.56	5.87	0.14	0.13
Las Perillas Pumping Plant							
Energy Metered at Pumping Plant	0.52	0.39	0.61	1.09	1.49	1.84	1.97
Less Energy Scheduled by USBR for CVP Pumping	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	0.52	0.39	0.61	1.09	1.49	1.84	1.97
San Luis Generation Plant							
Energy Metered at Generation Plant	0.00	0.00	12.02	15.37	17.09	72.13	75.27
Less Energy Scheduled by USBR for CVP Use	0.00	0.00	-12.09	-15.29	-9.45	-62.26	-40.88
Plus Excess Daily Energy Scheduled by USBR	0.00	0.00	0.13	0.01	0.11	0.24	0.05
SWP Share of Energy Generated	0.00	0.00	0.06	0.09	7.75	10.11	34.44

contract. The net gain to the SWP during 1986 was 1.69 billion kWh.

The Bottle Rock Geothermal steam plant provided 0.17 billion kWh during 1986. DWR paid MCR Geothermal Corp. $4,275,343 and withheld $1,253,840 because insufficient steam supply prevented Bottle Rock from generating at full capacity. This matter is presently in litigation (see "Litigation," Chapter III).

Reid Gardner Unit No. 4 supplied 0.80 billion kWh in 1986. This includes the return of 15.6 million kWh of energy banked with the Nevada Power Company in 1983 during initial start-up of this coal-fired unit. The balance of the banked energy due DWR was about 14.4 million kWh as of December 31, 1986.

DWR also has a contract with TERA Power Corporation for the purchase of energy produced at Bethany Wind Park, near the South Bay Pumping Plant. About 145 50-kW wind turbines were operational at the end of 1986; over 4 million kWh of wind-generated energy was delivered to DWR during the year.

Power Purchases and Power Service Costs

Power purchases and transmission service costs during 1986 are summarized in Table 7. DWR purchased 2.47 billion kWh of energy from 17 utilities for $42.89 million. Transmission, capacity, losses, and dispatching services amounted to $28.79 million. Other costs associated with the operation and management of SWP power resources not in Table 7 include:

- o debt service and OM&R costs of $8.65 million associated with the output of Pine Flat Powerplant;
- o OM&R and fuel costs of $43.34 million associated with Reid Gardner Unit No. 4; and
- o debt service and OM&R costs associated with other SWP-owned generation facilities.

Power Sales

Existing SWP resources, short-term power purchase and sales contracts, and longer term power and transmission contracts combine to ensure that the SWP has enough energy and capacity to meet future Project needs. DWR entered into power sales con-

AND CVP PUMPING AT SWP PLANTS AND JOINT-USE FACILITIES

(In millions of kilowatthours)

MONTH						ITEM
AUG	SEP	OCT	NOV	DEC	TOTAL	
						Harvey O. Banks Delta Pumping Plant
98.26	110.89	61.87	54.42	56.83	737.64	Energy Metered at Pumping Plant
-15.48	0.00	0.00	0.00	0.00	-41.53	Less Energy Scheduled by USBR for CVP Pumping
0.00	0.00	0.00	0.00	0.00	0.00	Plus Excess Daily Energy Scheduled by USBR
82.78	110.89	61.87	54.42	56.83	696.11	Energy Used for SWP Pumping
						Dos Amigos Pumping Plant
63.28	30.26	22.52	28.00	30.79	456.70	Energy Metered at Pumping Plant
-24.68	-4.55	-5.14	-4.38	-8.40	-185.43	Less Energy Scheduled by USBR for CVP Pumping
0.00	0.00	0.00	0.00	0.00	-0.04	Less Energy Scheduled by USBR for Station Service
0.00	0.00	0.00	0.00	0.00	0.00	Plus Excess Daily Energy Scheduled by USBR
38.60	25.71	17.38	23.62	22.39	271.23	Energy Used for SWP Pumping
						San Luis Pumping Plant
6.15	79.63	54.07	48.26	71.52	492.01	Energy Metered at Pumping Plant
0.00	-24.41	-28.57	-47.75	-67.45	-325.97	Less Energy Scheduled by USBR for CVP Plumbing
-0.17	-0.11	-0.17	-0.14	-0.12	-1.82	Less Energy Scheduled by USBR for Station Service
0.00	0.00	0.14	0.51	0.43	1.61	Plus Excess Daily Energy Scheduled by USBR
5.98	55.11	25.47	0.88	4.38	165.83	Energy Used for SWP Pumping
						Las Perillas Pumping Plant
1.29	0.71	0.41	0.07	0.15	10.54	Energy Metered at Pumping Plant
0.00	0.00	0.00	0.00	0.00	0.00	Less Energy Scheduled by USBR for CVP Pumping
1.29	0.71	0.41	0.07	0.15	10.54	Energy Used for SWP Pumping
						San Luis Generation Plant
34.18	0.65	0.00	0.00	0.00	226.71	Energy Metered at Generation Plant
-20.65	-0.62	0.00	0.00	0.00	-161.24	Less Energy Scheduled by USBR for CVP Use
0.09	0.00	0.00	0.00	0.00	0.63	Plus Excess Daily Energy Scheduled by USBR
13.62	0.03	0.00	0.00	0.00	66.10	SWP Share of Energy Generated

TABLE 7. SWP POWER AND TRANSMISSION SERVICE PURCHASES IN 1986

Supplier	Services Provided	Invoice Amount
Bonneville Power Authority	Nonfirm energy	$ 10,705,287
British Columbia Hydro Power Authority	Nonfirm energy	735,168
Idaho Power Company	Nonfirm energy	964,139
Kings River Conservation District	Hydroelectric energy	6,351,800
Los Angeles Department of Water and Power	Transmission and dispatching	91,884
MCR Geothermal Corporation	Geothermal steam	4,275,343(a
Montana Power Company	Nonfirm energy	479,000
Nevada Power Company	Transmission	1,001,214
Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas and Electric Company	EHV transmission	1,500,000
Pacific Gas and Electric Company	Transmission	13,445,308
Pacific Power and Light Company	Firm energy, transmission, and losses on third party systems	4,935,620
Portland General Electric Company	Firm energy	3,375,222
Salt River Project Agricultural Improvement and Power District	Energy	916,785
Southern California Edison Company	Transmission, filing fees, and dispatching	12,346,179
TERA Power Corporation	Wind energy	380,748
The Metropolitan Water District of Southern California	Hydroelectric energy	10,382,215
Washington Water Power Company	Nonfirm energy	3,526
Western Area Power Administration	Interconnection transmission	378,000
Total		$72,267,438

a) DWR withheld $1,253,840 for insufficient steam supply.

tracts to sell any excess capacity and energy, within the limit of SWP's contractual transmission capabilities, at Malin, Tesla, Vincent, Sylmar, and Eldorado substations.

DWR sells this excess capacity and energy on a daily basis to utilities at current market rates. The decision to sell the power, or to wait for a more opportune time, takes into consideration projected SWP operations and changes in the power market as well as energy losses, transmission costs, and dispatching costs. DWR's computerized accounting system monitors the status of the power purchases and sales operation.

Table 8 summarizes power related sales by DWR in 1986. Total energy sold was 3.48 billion kWh for a revenue of $68.37 million to 15 utilities. Other power related revenues were for peaking-capacity payments from Nevada Power Company and peaking-capacity foregone payments from LADWP for a combined revenue of $1.92 million.

Transmission Service Agreements

The transmission service agreements described in Bulletin 132-84 (page 38) are still in effect. Some contractual options on new interruptible transmission paths between Vincent-San Onofre, Vincent-Sylmar, Vincent-Midway, Vincent-Palo Verde, and Eldorado-Mead were exercised in order to make energy sales to utilities in Arizona, Nevada, and Southern California.

The Table Mountain reinforcement project, which increases the 500 kV transmission capacity on PGandE's transmission line from Table Mountain to Tesla substations, was completed in April 1987.

TABLE 8. SWP POWER SALES IN 1986

Purchaser	Kilowatthours	Amount of Sale
City of Anaheim	183,148,000	$ 3,864,880
City of Burbank	61,183,000	1,890,225
City of Glendale	32,232,000	1,050,871
City of Pasadena	64,335,000	1,930,928
City of Riverside	65,584,000	1,371,818
City of Santa Clara	124,400,000	2,620,660
City of Vernon	432,874,000	8,725,256
El Paso Electric Company	200,000	7,200
Los Angeles Department of Water and Power	48,225,000	2,137,951(a
Nevada Power Company	367,152,000	10,184,967(b
Northern California Power Agency	26,909,000	545,055
Pacific Gas and Electric Company	1,113,280,000	19,355,071
Salt River Project Agricultural Improvement and Power District	65,788,000	1,767,068
San Diego Gas and Electric Company	121,250,000	2,113,345
Southern California Edison Company	774,618,000	10,808,527(c
Total	3,481,178,000	$68,373,822

a) Includes $1,160,100 for peaking capacity foregone.
b) Includes $757,040 for capacity.
c) In addition to this amount, there was $26,259 in revenue for delivery of 2,076,000 kWh of energy to SCE under the DWR-SCE Generation Replacement Agreement. DWR made this energy delivery to SCE pursuant to the 1982 DWR-San Bernardino Valley Municipal Water District (SBVMWD) Energy Purchase Agreement to replace generation lost to SCE because of water diversions SBVMWD made from the Santa Ana River and Mill Creek.

Recreation and Visitor Facilities

Recreation days of use at SWP facilities totaled nearly 7 million during 1986. Table 9 summarizes this use, which includes camping, boating, fishing, swimming, bicycling, and other recreational activities. This total represents a 5 percent increase from 1985.

Most SWP recreation and visitor use was concentrated at the major reservoirs, where well-developed facilities exist to accommodate public use. Fifty-six percent of the total SWP recreation use in 1986 occurred at the four major reservoirs in Southern California.

At Lake Davis, in the Upper Feather River area, a lane was added to the existing boat launch ramp and additional courtesy floats were provided on the lake by the California Department of Boating and Waterways (DBAW).

By the end of 1986, construction was nearly complete on the East Bay Regional Park District's Phase IV facilities at Lake Del Valle. Among facilities in this development are 46 additional family campsites, a new amphitheater, 100 picnic sites, paved day-use parking area for 400 cars, a new group picnic area that will accommodate 150 people, and restroom and shower buildings. A new marina complex will begin construction during 1987.

At Pyramid Lake, 16 ramadas were constructed at boat-in sites around the lake: Yellowbar, 7; Beartrap, 3; and Serrano, 6. Restrooms were also constructed at the Serrano and Vaquero areas.

Los Angeles County Department of Parks and Recreation completed construction of new Castaic Lake patrol offices and lifeguard towers in July. The department operates the lake's recreation facilities. General improvements and construction of a boat